



Composite Coil Tubing Design

Costache, Andrei; Rezaei, Mohsen; Berggreen, Christian

Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Costache, A., Rezaei, M., & Berggreen, C. (2017). *Composite Coil Tubing Design*. Abstract from Danish Hydrocarbon Research and Technology Centre Technology Conference 2017, Lyngby, Denmark.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Danish Hydrocarbon Research and Technology Centre Technology Conference 2017

Composite Coil Tubing Design

Andrei Costache, Mohsen Rezaei^{}, Christian Berggreen*

Researcher, DTU-Department of Mechanical Engineering

Conventional steel coiled tubing cannot reach along the entire length of very long horizontal oil wells. A lighter and more buoyant coiled tube is made possible using composite materials. The high stiffness to weight ratio of fiber reinforced polymers, coupled with a lower coefficient of friction, has the potential of greatly extending the reach in horizontal oil wells. This study shows how to design composite coiled tubing and gives a comprehensive discussion about the most influential parameters. Several solutions, using glass-fiber and carbon are considered. Finite element models are used to calculate the buckling loads and the corresponding interlaminar stresses. The very positive results obtained during this study show that composite coiled tubing systems are vastly superior to their steel counterparts, and that in the future, these will become the new industry standard.



AARHUS UNIVERSITY



Technical
University of
Denmark



AALBORG UNIVERSITY
DENMARK